IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended): A ceramic heater system comprising:

a heater base ~~integrally~~ monolithically formed of a ceramic material,

the heater base including:

a mounting surface which is formed as an upper surface of the heater base and on which an object is mounted,

a heater, buried in said heater base, for heating the object, and

a fluid passage provided in said heater base below said heater, said fluid passage having a fluid inlet and fluid outlets formed in a lower surface of the heater base,

wherein said heater base is cooled by causing a fluid whose temperature is lower than a temperature of said heater base to be supplied through said fluid passage.

2. (Currently Amended): The ceramic heater system according to claim ~~1~~ 1, wherein said fluid passage has a plurality of concentric circular passage portions and a plurality of penetration passage portions connecting the circular portions passage.

3. (Canceled).

4. (Previously Presented): The ceramic heater system according to claim 2, wherein said fluid passage has a fluid inlet formed in a central portion of a lower surface of said heater base, and fluid outlets formed in outer circumference portions of the lower surface of said heater base.

5. (Currently Amended): The ceramic heater system according to claim [[3]] 1, wherein said fluid which flows in said fluid passage is at least one gas selected from Ar, He, Ne and N_2 gases or a mixed gas thereof.

6. (Previously Presented): The ceramic heater system according to claim 5, wherein said mixed gas contains Ar and He.

7-8. (Canceled).

9. (Original): The ceramic heater system according to claim 1, wherein said heater has a high-melting-point metal patterned in such a coil form as to evenly generate heat in said heater base and two zones.

10. (Original): The ceramic heater system according to claim 1, wherein said heater is formed of graphite or glassy carbon shaped in such a pattern as to evenly generate heat in said heater base.

11. (Previously Presented): The ceramic heater system according to claim 10, wherein said heater has glassy boron nitride coated on an outer surface of graphite or glassy carbon of which said heater is formed.

12. (Previously Presented): The ceramic heater system according to claim 1, further comprising:

an electrode buried in said heater base and located between the heater and the mounting surface; and

power supply means for applying a DC voltage to said electrode,

wherein, when the voltage is applied to the electrode, an electrostatic chuck is formed, the electrostatic chuck being for electrostatically attracting or repulsing the object mounted on the heater base, and the electrostatic chuck and the heater forming a one-body structure.

13. (Previously Presented): The ceramic heater system according to claim 1, further comprising:

a fluid supply source configured to output a fluid to be supplied through the fluid passage;

a temperature control unit configured to control the fluid from the fluid supply source such that the fluid has a temperature within a predetermined range, and to supply the fluid into the fluid passage; and

a heat exchanger configured to remove heat provided by the heater base from the fluid,

wherein the fluid is made to circulate via the fluid supply source, the temperature control unit, the fluid passage and the heat exchanger while being simultaneously controlled in temperature.

14-16. (Canceled).

17. (Previously Presented): The ceramic heater system according to claim 1, wherein said fluid passage has a fluid inlet formed in a central portion of a lower surface of said heater base, and fluid outlets formed through circumferential side walls of said heater base.

18. (Currently Amended): A ceramic heater system comprising:

an upper heater base ~~integrally~~ monolithically formed of a ceramic material; and

a lower heater base formed of a ceramic material, the upper heater base and the lower heater base forming a one-body heater base, with a lower surface of the upper heater base being in tight contact with the lower heater base,

the heater base including:

a mounting surface which is formed as an upper surface of the upper heater base and on which an object is mounted,

a heater, buried in said upper heater base, for heating the object, and

a fluid passage provided in the lower surface of the upper heater base and formed as a groove through which a fluid is supplied toward the mounting surface, the fluid passage having a fluid inlet and fluid outlets,

wherein said heater base is cooled by causing a fluid whose temperature is lower than a temperature of the upper heater base to be supplied through the fluid passage.

19. (Currently Amended): A substrate processing apparatus comprising:

a chamber whose interior can be kept in a vacuum state by an exhaust system;

a ceramic heater system which is provided in the chamber and which heats an object; and

processing means for performing a predetermined treatment on said substrate in said chamber,

said ceramic heater system including,

a heater base ~~integrally~~ monolithically formed of a ceramic material,

a mounting surface which is formed as an upper surface of the heater base and on which an object is mounted,

a heater, buried in said heater base, for heating said object, and

a fluid passage provided in said heater base below said heater, the fluid passage having a fluid inlet and fluid outlets formed in a lower surface of the heater base,

wherein said heater base is cooled by letting a fluid whose temperature is lower than a temperature of said heater base flow in said fluid passage.

20. (Original): The substrate processing apparatus according to claim 19, wherein said processing means includes:

a process-gas supply mechanism for feeding a process gas; and

a shower head, provided in said chamber at a ceiling thereof, for introducing said process gas from said process-gas supply mechanism,

whereby a film is formed on said substrate by a reaction of said process gas.

21. (Previously Presented): The substrate processing apparatus according to claim 20, further comprising:

a high-frequency power supply, connected to said shower head, for electrically, isolating said shower head and applying high-frequency power to said shower head; and

a lower electrode embedded in the heater base and located between an upper surface of the heater base and the heater,

wherein plasma is generated by applying the high-frequency power to the shower head in the chamber which is in a gaseous atmosphere supplied with the process gas from the shower head, and a film is formed on the object by a reaction of the process gas with the plasma.

22. (Previously Presented): The substrate processing apparatus according to claim 19, wherein said processing means includes:

a gas feeding mechanism for feeding an etching gas,

an electrically isolated shower head, provided in said chamber at a ceiling thereof, for introducing a process gas from said gas feeding mechanism,

a high-frequency power supply, connected to said shower head, for applying high-frequency power to said shower head, and

a lower electrode embedded in the heater base and located between the heater base and the heater,

wherein, when the high-frequency power is applied to the shower head and/or the lower electrode in a chamber atmosphere into which the etching gas is supplied from the shower head, plasma is generated and a surface of the object is etched by a reaction of the etching gas.

23-25. (Canceled).

26. (Previously Presented): The ceramic heater system according to claim 1, wherein the ceramic material includes at least one of a nitride-based metallic material having a high melting point and an oxide-based metallic material having a high melting point.

27. (Previously Presented): The ceramic heater system according to claim 26, wherein the nitride-based metallic material is AlN.

28. (Previously Presented): The ceramic heater system according to claim 18, wherein the fluid passage has a plurality of concentric circular passage portions and a plurality of penetration passage portions connecting the circular passage portions.

29. (Canceled).

30. (Currently Amended): The ceramic heater system according to claim ~~29~~ 18, wherein the fluid passage has a fluid inlet formed in a central portion of a lower surface of the heater base, and fluid outlets formed in outer circumference portions of the lower surface of the heater base.

31. (Previously Presented): The ceramic heater system according to claim 18, wherein the fluid supplied through the fluid passage is a gas selected from the group consisting of Ar, He, Ne and N_2, or a mixture gas of gases selected from the group.

32. (Previously Presented): The ceramic heater system according to claim 31, wherein the mixture gas contains Ar and He.

33-35. (Canceled).

36. (Previously Presented): The ceramic heater system according to claim 18, wherein the heater is a winding which is made of a high-melting point metallic material and which has a pattern that enables an internal region of the heat base to be uniformly heated.

37. (Previously Presented): The ceramic heater system according to claim 18, wherein the heater is made of graphite or vitreous carbon and has a pattern that enables an internal region of the heater base to be uniformly heated

38. (Previously Presented): The ceramic heater system according to clam 37, wherein the heater is made by coating vitreous boron nitride over outer surfaces of graphite or glass carbon.

39. (Previously Presented): The ceramic heater system according to claim 18, further comprising:

an electrode buried in the heater base and located between the heater and the mounting surface, and

power supply means for applying a voltage to the electrode,

wherein, when the voltage is applied to the electrode in an ON state, an electrostatic chuck is formed, the electrostatic chuck being for electrostatically attracting or repulsing the object mounted on the heater base, and when no voltage is applied to the electrode in an OFF state, no electrostatic chuck is formed, the electrostatic chuck and the heater forming a one-body structure.

40. (Previously Presented): The ceramic heater system according to claim 18, further comprising:

a fluid supply source configured to output a fluid to be supplied through the fluid passage;

a temperature control unit configured to control the fluid from the fluid supply source such that the fluid has a temperature within a predetermined range, and to supply the fluid into the fluid passage; and

a heat exchanger configured to remove heat provided by the heater base from the fluid,

wherein the fluid is made to circulate via the fluid supply source, the temperature control unit, the fluid passage and the heat exchanger, while being simultaneously controlled in temperature.

41. (Previously Presented): The ceramic heater system according to claim 18, wherein the fluid passage has an increased internal surface area, thereby providing an improved heating/cooling efficiency.

42. (Currently Amended): The ceramic heater system according to claim 41, wherein an internal surface area of the fluid passage is formed by ~~one of a heat-radiating fin and~~ a roughened inner surface.

43. (Previously Presented): The ceramic heater system according to claim 12, wherein the power supply means includes one of a DC current supply and a high-frequency power supply.

44. (Previously Presented): The ceramic heater system according to claim 18, wherein the upper heater base and the lower heater base are coupled together by use of a ceramic adhesive or a screw.

45-50. (Canceled).

51. (Currently Amended): A ceramic heater system comprising:

a heater base ~~integrally~~ monolithically formed of a ceramic material made of AIN, the heater base including:

a mounting surface which is formed as an upper surface of the heater base and a heater, buried in said heater base, for heating the object; and

a fluid passage provided in said heater base and having a fluid inlet and fluid outlets formed in a lower surface of the heater base,

wherein said heater base is cooled by causing a fluid whose temperature is lower than a temperature of said heater base to be supplied through said fluid passage.

52. (Previously Presented): The ceramic heater system according to claim 51, wherein the inlet of the fluid passage is formed in a central portion of the lower surface of the heater base, and the fluid outlets of the fluid passage are formed in outer circumference portions of the lower surface of the heater base.

53. (Previously Presented): The ceramic heater system according to claim 51, further comprising:

an electrode buried in the heater base and located between the heater and the mounting surface; and

power supply means for applying a voltage by one of a DC current supply and high-frequency power supply to the electrode,

wherein, when the voltage is applied to the electrode, an electrostatic chuck is formed, the electrostatic chuck being for electrostatically attracting or repulsing the object mounted on the heater base, and the electrostatic chuck and the heater forming a one-body structure.

54. (Previously Presented): The ceramic heater system according to claim 51, wherein the fluid passage has an increased internal surface area, thereby providing an improved heating/cooling efficiency.

55. (Currently Amended): The ceramic heater system according to claim 51, wherein the fluid passage has a ~~heat-radiating fin located on a heater side and has a~~ roughened inner surface located on the heater side.

56. (Currently Amended): A ceramic heater system comprising:

a heater base ~~integrally~~ monolithically formed of a ceramic material,

the heater base including:

a mounting surface which is formed as an upper surface of the heater base and on which an object is mounted;

a heater for heating the object, the heater being buried in said heater base and having a high-melting-point metal patterned in such a coil form as to evenly generate heat in the heater base; and

a fluid passage provided in said heater base below said heater,

wherein said heater base is cooled by causing a fluid whose temperature is lower than a temperature of said heater base to be supplied through said fluid passage.

57. (Previously Presented): The ceramic heater system according to claim 56, wherein the fluid passage has a fluid inlet formed in a central portion of a lower surface of the heater base, and fluid outlets formed in outer circumference portions of the lower surface of the heater base.

58. (Previously Presented): The ceramic heater system according to claim 56, further comprising:

an electrode buried in the heater base and located between the heater and the mounting surface; and

power supply means for applying a voltage by one of a DC current supply and high-frequency power supply to the electrode,

wherein, when the voltage is applied to the electrode, an electrostatic chuck is formed, the electrostatic chuck being for electrostatically attracting or repulsing the object mounted on the heater base, and the electrostatic chuck and the heater forming a one-body structure.

59. (Previously Presented): The ceramic heater system according to claim 56, wherein the fluid passage has an increased internal surface area, thereby providing an improved heating/cooling efficiency.

60. (Currently Amended): The ceramic heater system according to claim 56, wherein the fluid passage has a ~~heat-radiating fin located on a heater side and has a~~ roughened inner surface located on the heater side.

61. (Previously Presented): The ceramic heater system according to claim 56, wherein the fluid passage has a fluid inlet and fluid outlets formed in a lower surface of the heater base.

62. (Previously Presented): The ceramic heater system according to claim 18, wherein the ceramic material includes at least one of a nitride-based metallic material having a high melting point and an oxide-based metallic material having a high melting point.

63. (Previously Presented): The ceramic heater system according to claim 1, wherein the fluid passage has an increased internal surface area, thereby providing an improved heating/cooling efficiency.

64. (Previously Presented): The ceramic heater system according to claim 39, wherein the power supply means includes one of a DC current supply and a high-frequency power supply.

65. (Previously Presented): The ceramic heater system according to claim 1, wherein the fluid inlet and the fluid outlets of the fluid passage are connected to a fluid supply source and a fluid discharge line.

66. (Previously Presented): The ceramic heater system according to claim 18, wherein the fluid inlet and the fluid outlets of the fluid passage are connected to a fluid supply source and a fluid discharge line.

67. (Previously Presented): The ceramic heater system according to claim 19, wherein the fluid inlet and the fluid outlets of the fluid passage are connected to a fluid supply source and a fluid discharge line.

68. (Previously Presented): The ceramic heater system according to claim 51, wherein the fluid inlet and the fluid outlets of the fluid passage are connected to a fluid supply source and a fluid discharge line.

69. (Previously Presented): The ceramic heater system according to claim 56, wherein the fluid inlet and the fluid outlets of the fluid passage are connected to a fluid supply source and a fluid discharge line.

70-74 (Canceled).

75. (Previously Presented): The ceramic heater system according to claim 9, wherein the high-melting-point metal is one of W, Mo and Pt.

76. (Previously Presented): The ceramic heater system according to claim 36, wherein the high-melting point metal includes a metal selected from the group consisting of W, Mo, or Pt.